Skin Disease Diagnosis Using VGG19 Algorithm And Treatment Recommendation System

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***Abstract*— Skin infections are highly common today. A small circular or haphazardlyshaped spot on the patient's skin might be detected because of skin illness. When this condition develops into skin cancer, it can sometimes be quite hazardous. By querying an open-source dataset for skin diseases, this project searches for signs of probable skin abrasion or infection using neural networks or machine learning algorithms. Based on the model's accuracy, it deliversthe closest match to the patient's condition. Including the finest treatments available that can aid in treating the detected disease with a tailored dataset, we will use CNN transfer learning, either VGG19 or different Resnet approaches, for our project. 23 classes, but we are seeking to meet at least 12+ classes. Accuracy of90% above on train and 85% above on validation. The Project identifies for potential skin abrasion or an infection using Neural Network or Machine Learning Algorithms, based on the accuracy of the model it provides closest match to possible condition of the patient by querying open-source skin disease dataset. Also providing the best possible remedies which can help in curing the identified disease. A person's quality of life may be significantly impacted by skin conditions. They can cause physical pain, emotional distress, and social isolation. They can also lead to financial burden, as many skin diseases require expensive treatment. In severe cases, skin diseases canbe life-threatening. The skin diseases application is agreat resource for anyone with a skin condition.It provides information on different skin diseases, as well as treatment options and tips for managing your condition.**

Keywords*— CNN, Skin Diseases, Web Interface, VGG19

I. INTRODUCTION

India has a diverse population and a wide range of environmental conditions, which can contribute to the development of various skin diseases. Some common skin conditions that are seen in India include acne, fungal infections, eczema, psoriasis, and vitiligo. Other skin diseases that are commonly seen in India include leprosy, scabies, and skin tuberculosis. Making sure that the disease is detected early and ensuring that the right treatment is provided is important for effective curing. For example, some skin conditions, such as acne and eczema, can be treated with topical medications or creams that can be applied directly to the affected area. Other skin conditions, such as psoriasis and leprosy, may require more specialized treatment, such as oral medications or light therapy. In some cases, skin diseases may also be managed through lifestyle changes, such as avoiding certain triggers or practicing good skin care habits. It is also important to remember that managing a skin condition often involves a combination of medical treatment and self-care. This may include using over-the-counter or prescription medications, practicing good skin care habits, and avoiding triggers that can worsen your condition.

Automated skin disease analysis utilising machine learning and deep learning approaches has gained popularity in recent years. One approach that has been particularly successful is the use of convolutional neural networks (CNNs), which have achieved trailblazing performance on a variety of medical image analysis tasks. In this paper, we explore the use of the VGG19 architecture, a widely-used CNN, for automated skin disease analysis. We present a detailed analysis of the performance of the VGG19 model on a large customised dataset of skin disease images, and compare its performance to other advanced CNN models. Our results demonstrate the effectiveness of the VGG19 architecture for automated skin disease analysis, and highlight the potential of machine learning techniques for improving the accuracy and efficiency of skin disease diagnosis. Image processing and feature extraction are important steps in many machine learning and computer vision applications, including the analysis of skin diseases. Image processing involves manipulating and analysing images to extract useful information from them. This can include tasks such as image enhancement, noise reduction, and feature extraction. Feature extraction is used to extract the features or characterises from an image. These features can be used to represent the image in a more compact and informative way, making it easier to analyse and classify. For example, in the context of skin disease analysis, feature extraction might involve identifying and extracting the colour, texture, and shape of various skin lesions or other abnormalities. There are many different techniques that can be used for image processing and feature extraction, ranging from simple techniques like edge detection and pixel intensity analysis to more complex techniques like convolutional neural networks (CNNs) and deep learning. Technique used will depend on the application that is being used. The internet being the most extensively used, A web application for skin disease analysis would allow users to upload images of their skin and receive an automated analysis of any potential skin conditions. This type of application could be useful for individuals who are concerned about a skin condition but do not have access to a dermatologist or who simply want a quick and convenient way to get an initial assessment of their skin health. Our approach would use a web or mobile application by integrating with the machine learning algorithm VGG19.Training the model over a customized

dataset of images and then training the model to determine the kind of disease and providing the same with remedies as well dos and don'ts.

This paper is aimed to detect nine diseases. To make the application globally accessible it has been deployed on docker which ensures fast and easy configuration. Users around the world can access the application over the internet. By using Docker, you can ensure that your application will run consistently and reliably, regardless of the specific environment in which it is deployed. There may still be other considerations to consider when making your application available to a global audience. For example, you may need to consider issues such as localization, data privacy, and compliance with local laws and regulations.

II. Literature Survey

. Honey Janoria, Jasmine Minj and Pooja Patre make use of deep learning-based methods for extracting characteristics from skin cancer photos to aid in identifying the type of skin illness. Transfer learning model, using the VGG-16 layer CNN architecture for feature extraction, is tested with various machine learning classifiers such as SVM, decision trees, linear discriminate analysis, and KNN algorithms. The results show that the combination of the VGG-16 CNN model and the KNN algorithm achieved the highest accuracy of 99%.[1]

Shouvik Chakraborty presents a neural detection technique for skin disorders, specifically Basal Cell Carcinoma and Skin Angioma, using skin imaging. The technique uses SIFT feature extractor to reduce the number of features and clusters the feature space. A metaheuristic-supported hybrid ANN is trained on the modified bag-of-features dataset extracted to classify the skin images and detect the diseases.[2]

V. Pugazhenthi, Sagar K. Naik, Amruta D. Joshi, Shreya S. Manerkar, Vinita U. Nagvekar, Kalpita P. Naik, Chinmay G. Palekar, K Sagar in their paper have discussed about using global thresholding and decision tree techniques to classify the skin diseases.[3]

K. Roy, S. S. Chaudhuri, S. Ghosh, S. K. Dutta, P.Chakraborty, and R. Sarkar describes the use of various image processing techniques to identify skin diseases from a given image set. These techniques include adaptive thresholding, which adjusts the threshold values of an image based on local variations in pixel intensity; edge detection, which is used to identify and extract the boundaries of objects in an image; K-means clustering, which is a method of grouping similar data points together based on their features; and morphology-based image segmentation, which uses mathematical morphology operations to separate objects in an image based on their shape and size.[4]

T. A. Rimi, N. Sultana, and M. F. Ahmed Foysal uses the CNN and DNN models are trained on a dataset of images of skin diseases, with the CNN model being used to extract features from the images and the DNN model being used to classify the images based on these features. The image processing techniques used to analyze the images include various methods such as edge detection, colour analysis, and texture analysis. The results of the study show that the combination of CNN, DNN and image processing techniques can effectively classify the 5 different skin diseases with high accuracy.[5]

Allugunti, Viswanatha study aims to distinguish among different types of melanomas (lesion maligna, superficial spreading, and nodular melanoma) to enable early diagnosis and prompt treatment to prevent further spread of the disease. The study utilizes deep learning (DL) techniques, specifically convolutional neural network (CNN) algorithms, and a standard non-parametric machine learning method to analyze and classify the images of melanoma.[6]

Evgin Goceri describes a mobile application that uses deep learning to classify skin lesions. The application utilizes a lightweight network architecture called MobileNet the MobileNet network is trained on a dataset of images of skin lesions and is used to classify the images into different types of skin diseases. The use of MobileNet allows for the application to be run on a mobile device and provides accurate lesion classification results. The goal of this application is to provide a convenient and accessible tool for individuals to easily self-diagnose their skin lesions and seek medical attention if necessary.[7]

AlDera, Shaden Abdulaziz; Mohamed Tahar Ben Othman features extracted from images are then used to train different classification algorithms such as SVM, RF and K-NN.[8]

Inthiyaz, S., Altahan, B. R., Ahammad, S. H., Rajesh, V.,Kalangi, R. R., Smirani, L. K., Hossain, M. A., & Rashed, A. N. Z ; this article describes a process for diagnosing skin diseases using skin photographs. The photographs are first pre-processed by removing noise and enhancing the overall quality of the image. Then, advanced techniques such as Convolutional Neural Network (CNN) are used to extract features from the image. These features are then used to classify the image using the SoftMax classifier algorithm. The output of the process is a diagnostic report that can aid in identifying the type of skin disease.[9]

S. Gopalakrishnan, Dr. Ebenezer Abishek. B, Dr. A.Vijayalakshmi describes a clinical feature-based diagnosis tool that uses an Artificial Neural Network (ANN) model to classify segmented images of skin diseases. The GLCM (Grey Level Co-occurrence Matrix) matrix is used to extract features from the images, which are then input into the ANN model for classification.[10]

Yasir Salam Abdulghafoor, Muntaha R.Ibraheem involves the use of MATLAB to process images of skin affected by eczema, with the goal of accurately identifying and classifying the disease. Image processing techniques such as colour analysis and texture analysis are used to extract features from the images, which are then used to train a classifier to diagnose eczema.[11]

Karthik, Ra, Tejas Sunil Vaichole, Sanika Kiran Kulkarni, Ojaswa Yadav, Faiz Khand use of a state-of-the-art computer vision model called EfficientNetV2 with efficient channel attention to classify skin diseases. The model is a convolutional neural network (CNN) architecture that is trained on a dataset of images of skin diseases. The EfficientNetV2 model is known for its high accuracy and ability to handle large image datasets.[12]

Hasan Maher Ahmed,Manar Younis Kashmola design and development of a computer-based system for the segmentation and classification of malignant skin diseases, specifically Basal Cell Carcinoma (BCC).[13]

Khawla Ben Salah, Mohamed Othmani & Monji Kherallah use of colour models and deep learning techniques

to detect skin in images. The method utilizes a convolutional neural network (CNN) architecture to analyze images and identify skin regions. Colour models such as RGB, YCbCr, and HSV are used to extract colour information from the images, which is then used as input for the CNN. The CNN is trained on a dataset of images that contain skin and non-skin regions, and it learns to differentiate between the two.[14]

Prof. Apurva Wattamwar, Devendra Khandale, Mayur Dukale, Dattatraye Patil, Karan Aherewal the development of a web-based system for the diagnosis of skin diseases using python, which utilizes the canny edge detection algorithm for image processing. Canny edge detection is a technique used to detect the edges in an image by finding the boundaries of different regions in the image. model is built using python, The web-based system allows users to upload images of their skin lesions and receive a diagnosis in a convenient and accessible way.[15]

III. Problem Statement

Skin diseases are one of today's most common ailments. Skin disease can cause small circular or random shaped areas on the patient's skin. This disease can be extremely dangerous in some cases, even resulting in skin cancer. This project looks for potential skin abrasions or infections. By querying an open-source skin disease dataset, the closest match to the patient's condition was found.

IV. METHODOLOGY

There are currently several methods for detecting skin disease. Always the most important thing which goes on is gathering of data, followed by data cleaning. When the data is ready, it is trained using one of CNN's transfer learning techniques, VGG19, and a model is created. After the model is created, it is tested for a metrics of accuracy on test data. We have nutshell it as a web app, so it looks even better. Finally, we deployed it as a container image via Docker.

A. Existing Methodology

There are several existing skin disease AI models that have been developed and deployed in various settings. Here are a few examples:

- Dermatologist-level classification of skin cancer: A model developed by researchers at Stanford University was able to classify skin cancers with a level of accuracy like that of dermatologists. The model was trained on a dataset of over 100,000 skin images and was able to identify melanoma, basal cell carcinoma, and squamous cell carcinoma with high accuracy.
- Automated melanoma diagnosis: Another model developed by researchers at the University of Edinburgh was able to accurately diagnose melanoma, a type of skin cancer, using images of skin lesions. The model was trained on a dataset of over 2,000 images and was able to outperform dermatologists in terms of accuracy.
- Psoriasis diagnosis and treatment recommendation: A model developed by researchers at the University of California, San Francisco was able to accurately diagnose and recommend treatment for psoriasis, a chronic skin disease, using images and other data inputs. The model was trained on a dataset of over 10,000 patients and was able to provide treatment recommendations that were consistent with clinical guidelines.

B. Demerits of Existing System

While skin disease AI models have the capability to improve the efficiency and accuracy of dermatological care, there are some constraints and difficulties related to these methods.. Here are a few potential demerits of existing skin disease AI models:

- Limited generalizability: Many methods small datasets are used to train AI models, which may make it difficult for them to generalise to different populations or environments.. This means that the models may not be as accurate when applied to new or unseen cases.
- Dependence on high-quality data: The level and variety of the data utilised to train AI models is crucial to their success. The model's performance may be affected by biased or incomplete data.
- Ethical considerations: There are also ethical considerations surrounding the use of skin disease AI models, such as concerns about privacy and the potential for bias in the training data to be perpetuated in the model's predictions.
- Limitations of AI: It is crucial to understand that artificial intelligence cannot take the place of human knowledge and discretion. Skin disease AI models should be used as a tool to assist dermatologists, rather than replacing them.

C. Proposed System

A camera or webcam is used to capture the user's image. In order to increase the effectiveness of the classifier used to identify the body part present in the photo after it has been taken, the frame of the acquired image from the webcam feed is transformed to a grayscale image. After conversion, the image is transmitted to a classifier algorithm, which uses feature extraction methods to identify the contaminated region in the web camera stream frame. Hyperparameter tuning allows for automatic feature extraction. Individual features are taken from the infection's retrieved image and supplied to the trained network in order to identify the user's expressed emotions. These images will be used to train the classifier so that, when a brand-new, unknown set of images is presented to it, it will be able to extract the position of feature points from those images using the knowledge it had already learned from the training set and return the coordinates of the new feature points that it detected. The network is trained using a customized dataset developed from open source and freely available online sources. This is used to identify the skin disease that a user is suffering from. We are creating both an app as well as a website, to ease the access to our platform. Our model supports both webcam/ camera captured images as well as images uploaded from local storage as files.

D. Advantages Of Proposed System

- Existing systems are complicated in use due to high time and memory requirements for getting features extraction in real- time. Our model gives better identification of the infection.
- There is no need of use of any physical wearable physiological sensors, which in turn reduces the cost of the system.
- Our model can classify 12+ diseases as compared to the specific existing models.
- We propose a new Classification Algorithm known as VGG19.
- We have achieved a 86.7% accuracy on test.
- Supports simple and friendly GUI to use.

The below shown figure is the system architecture.

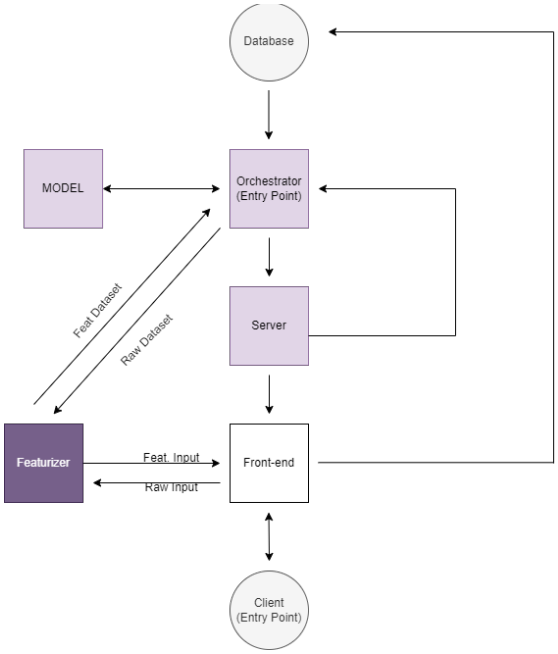

Fig. 1. System Architecture

V. IMPLEMENTATION

A. Image Recognition

CNN has superior high- level image perception compared to other similar neural networking algorithms. It has contextual awareness, and possesses massively parallel processing capabilities yet they can't perform as well as human eyes. However, after extended observation, human abilities significantly deteriorate, and some working environments are either out of human reach or too harmful for them. These characteristics lead to the development of automatic recognition systems for a range of applications. Recent developments in computational power derived from specialized processors like Tensor cores and image processing technology have improved computer aided image identification in a few useful areas

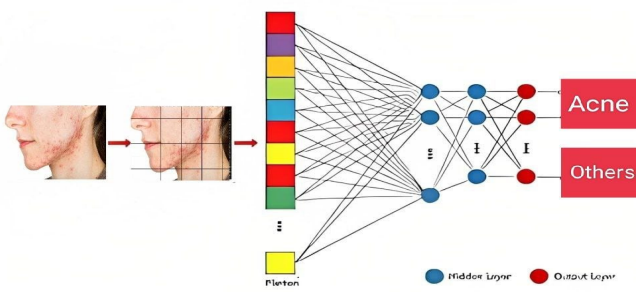

Fig. 2. Recognising image by extracting features from pixel and producing output

B. Deep Learning

It is a subset of machine learning. It is widely used technique for performing image recognition. It uses neural networking technique to identify images. The working of neural network is similar to that of a human brain, the learning is been stored in individual neurons and thereby it performs various pre-processing, feature extraction, hyperparameter tuning and many such techniques to perform its detection. It has 3 layers namely input, hidden, output layer. The input layer accepts input in the form of an image, text, etc. as suggested by its name. The hidden layer is where all of the activation function processing takes place. The output layer is the final layer, where the result is produced.. Based on the desired accuracy it stops or it performs backward prorogation by changing parameters and meeting accuracy.

C. Data Preprocessing

Data preparation is preparing raw data to be usable by an AI model. It is the primary stage in the process of developing an engine. When working on an ML project, the acquisition of clean, prepared data is next to impossible. Data must be pre-treated to obtain a valid dataset. The steps to formulate a clean dataset are:

- Bringing in datasets: A dataset is like an example of our learning algorithm, in which our algorithm glances at pixelated edges and tries to understand the change in behaviour, patterns, and trends. Based on the observations a resulting model is been generated which tries to predict the testing data.
- Encoding Missing Data and Finding It Data Categorical: This step is very important before training the model just to avoid random predictions thrown by the model. The dataset might involve missing values, pointless images, redundancy, and much more flaws. These flaws lead to unwanted results. So, this can be avoided by either deleting or altering the existing data.
- Dividing the dataset into a test and training set: The dataset set is been divided into 2 sets namely train and test. The train is the one with help of which the model is trained and the test is the one with which the model's predictions are tested.

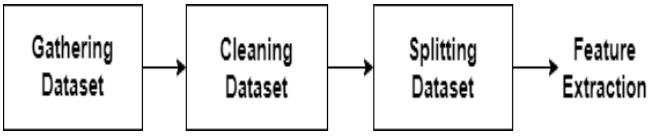

Fig. 3. Step by step procedure followed for preprocessing of customised dataset

D. Dataset/ Data Collection

A dataset is a collection of data. Dataset set has been divided into 2 sets namely train and test. The train is the one with help of which the model is been trained and the test is the one with which the models' predictions are tested. A dataset is like an example to our learning algorithm, to which our algorithm glances pixelated edges and tries to understand the change in behaviour, patterns, and trends. Based on the observations a resulted model has been generated which tries to predict the testing data. The common types of data include:

- Text data
- Audio data
- Image data
- Numeric data
- Video data

The data which is generated is usually in labelled form so that the algorithm can easily infer from it and provide the best possible outcome. Our dataset is completely customized. We have collected dataset from various sources namely Kaggle, Google, adobe stock, and much more.

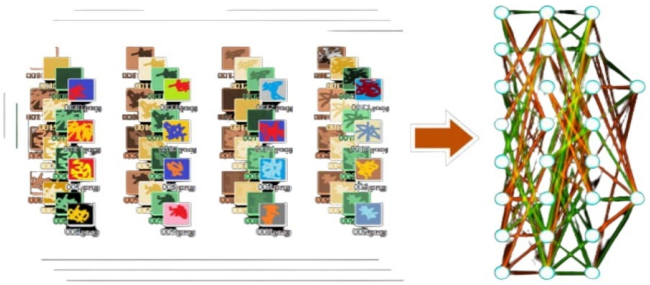

Fig. 4. Gathering of dataset from various sources namely kaggle, google, adobe stock, and much more.

E. Feature Extraction

Point birth is used in machine literacy and deep literacy. It is the process of transforming unprocessed data into numerical features that can be handled while keeping the original data set's information. Compared to using machine literacy on raw data directly, it produces better outcomes. Features can be uprooted manually or automatically Homemade point birth requires the identification and description of the rates that are applicable to a certain circumstance, as well as the construction of a fashion to prize similar features. A strong understanding of the environment or sphere may constantly help in deciding which features could be useful. masterminds and scientists have spent numerous times developing point birth algorithms for filmland, signals, and textbook through thorough exploration. The mean of a signal's window is an illustration of a simple characteristic. By automatically rooting characteristics from signals or filmland using specialised algorithms or deep networks, automated point birth reduces the need for mortal participation. This strategy may be relatively useful when you need to gormandize shift from gathering raw data to constructing machine literacy algorithms. Wavelet scattering is an illustration of automated point birth. The original layers of deep networks have essentially replaced point birth with the introduction of deep literacy, albeit typically for image data. Prior to constructing robust vaticination models for signal and time- series operations, point birth remains the first challenge that necessitates a high position of moxie.

F. Data augmentation

Data augmentation is an artificial technique to add up new data points from existing ones. It replicates the existing sample data with additional features. If we have trained our model with the actual dataset, the dataset will try predicting based on that trained data. But there can be scenarios where the data class is the same, but the appearance of the test sample is uneven. The unevenness mentioned can be the opposite, with no standard size, zoomed, rotated, sheared, and other such flaws. So, it is always better to add more data to the collection. The addition can be done by changing the parameters of ImageDataGenerator. Some of which used are:

- Rescale: It resizes the data to a consistent shape and also rescales pixel values.
- Shear Range: It slants the shape of the image. It is different from rotation, as it uses one fixed axis to determine the slant.
- Horizontal Flip: The generated data is flipped horizontally.
- Zoom Range: The image is shrunk or magnified depending on whether the value is more than or less than 1.0.

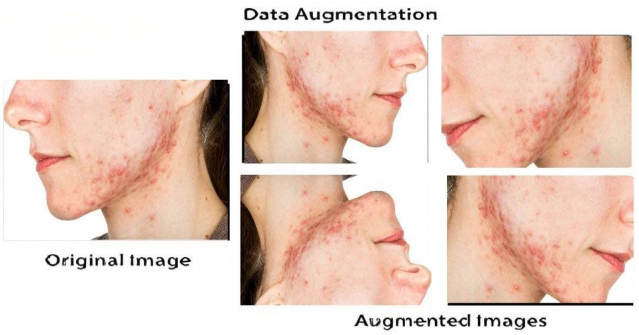

Fig. 5. Image getting augmented into various sets, for a simple purpose of dealing with different inputs.

G. Convolutional Neural Network

Convolutional networks, a subset of feed-forward neural networks that process data in a grid-like arrangement to analyse visual images. It is also known as a ConvNet. Utilizing convolutional neural networks, objects in an image are found and categorised. They have shown to be incredibly successful in fields like picture recognition and classification. Convolutional layers serve as the feature extractor in a CNN

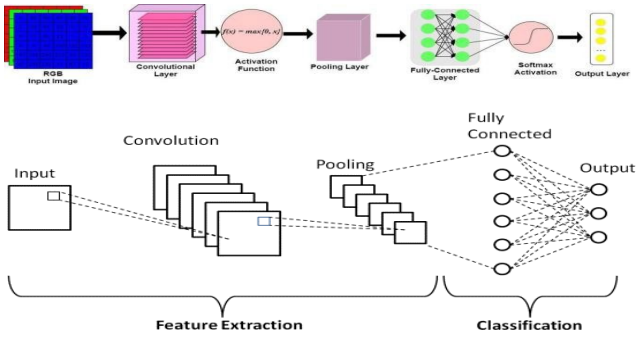

Fig. 6. Convolutional Neural Network architecture showcasing pixel feature extraction, formulating mathematical processing, and generating output.

H. VGG19 Algorithm

Deep learning models such as Keras Applications are available in addition to pre-trained weights. These models can be applied to feature extraction, prediction, and correction. Weights are downloaded right away when a model is instantiated. They are stored in the /.keras/models/ directory. After being instantiated, the models will be constructed in line with the picture data format defined in your Keras configuration file, which can be found at /.keras/keras.json. For instance, every model fetched from this repository will be produced if your image data format setting is set to channels last. using the "Height-Width-Depth" TensorFlow data format convention.

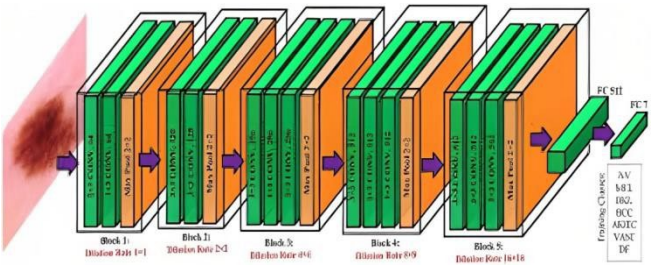

Fig. 7. Vgg19 algorithm is formed with a depth intuition of 19 layers and it has 143.7M parameters

I. Performance measures

The most common metric for measuring a model's comprehension is accuracy. The percentage of correct classifications made by a trained machine learning model is known as accuracy, and it is calculated by dividing the total number of predictions made across all classes by the number of correct predictions. Accuracy can be defined as:

ACC =TP + TNTP + TN + FN + TP =TP + TNP + N.

A proportional measurement of accuracy is the total number of predictions divided by the number of correct predictions. True positives (TP) and true negatives (TN) make up correct predictions (TN). All predictions are made up of both positive (P) and negative (N) examples. P is made up of TP and false positives (FP), while N is made up of TN and false negatives (FN) (FN). It is also important to note that, as with any metric evaluation, evaluating model accuracy should be done on a statistically significant number of predictions.

J. Web Application

As a low-cost communications conduit, the Internet is utilised by millions of organisations. The users as well as the servers and systems on the network are able to quickly and conveniently exchange data with their end points. Effective engagement, however, can only be achieved when a company has the tools to gather, store, process, and present the user with the information they need. In order to manage the storing and retrieval of information, web applications use a variety of client-side scripts (HTML, CSS and JavaScript) and server-side scripts (PHP, ASP and .NET). Talking about our project, we have divided our project into three sections namely application, engine, and integration. We have made an application for efficient working of our projectwith simple web technologies like HTML, CSS, JS. As discussed before, our engine is made with help of keras transfer learning technique called VGG19.Just to make a proper working or coordination of our working we have usedFlask for an eventful integration.

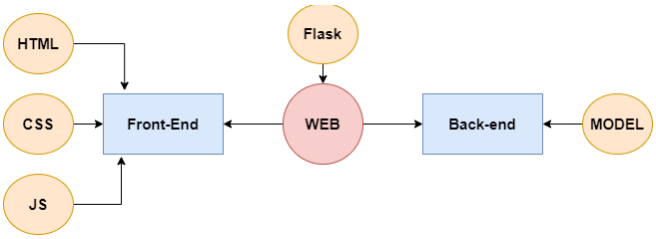

Fig. 8. An application is developed for efficient working by integrating front end and back end.

K. Docker

The potential of containers can be used to easily construct, deploy, and operate applications thanks to Docker, a straightforward tool. With the aid of containers, a developer is able to bundle an application along with all of its dependencies, such as libraries, other frameworks, or code snippets, and send it out as a single, complete package.. By doing so, Docker enables developers to create universally portable applications that once deployed can be used on any existing environment.Docker is built on top of Linux containerization technology, but it is designed to be used with any application and run on any infrastructure. You can use Docker to run applications in a variety of environments, including on-premises servers, cloud-based platforms, and local development machines. Docker is a container-based application development and deployment tool. Containers are founded on the idea that code and its dependencies may be packed into deployable pieces. Containers have existed for a long time. Some people assert that Sun Microsystems developed it and launched Zones as a component of Solaris 10 in 2005, while others assert that BSD Jails was the first container technology to be used. Take an intermodal shipping container, for instance, as an illustration of a visual explanation.

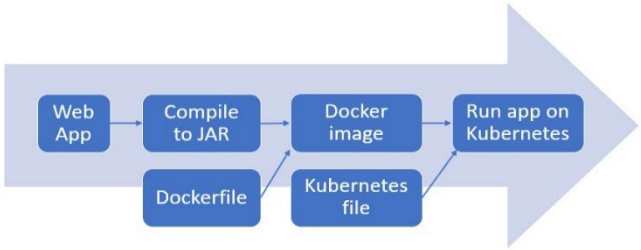

Fig. 9. Creating a nutsell or a container for application and is been deployed, for enhancing its accessability in different environments

VI. Experimental Results

Simple to have a user-friendly application, which can be used by users of any level of technological understanding. Our project also showcases facts about diseases, how a disease might have been acquired or the reason for getting diseases. It also provides knowledge of various diseases, which helps any user to have basic understanding about the disease.

Fig. 10. Home Screen, which shows informational details such as facts, resaerches, and knowledge about disease.

We are looking to increase the count of disease at present we have 9 diseases, we are looking to have at least 12 such diseases. The accuracy that we have achieved is 94% for 9 diseases and we are certainly looking to add up more images in the dataset to meet at most accuracy.

Fig. 11. Uploading page, where the user adds his image by either upload or clicking image option

The dos and don'ts of remedies satisfies every condition of the patient allows the user to potentially improve their condition. The list is generalized in nature and should only be taken as a guidance for the condition. A doctor's recommendation is still highly advised.

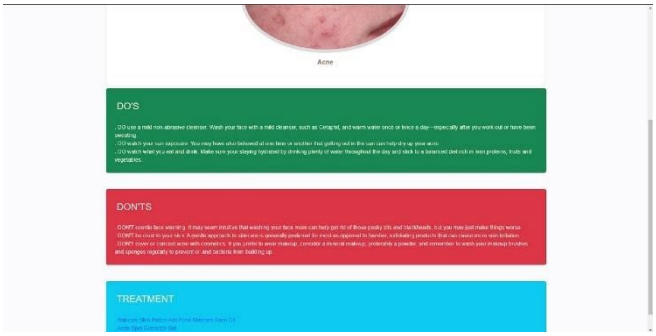

Fig. 12. Remedies page, which show dos actions to do, donts actions to avoid. Also provides 2 to 3 prescribed remedies.

The graph between epochs and accuracy and loss can be expressed as the following.

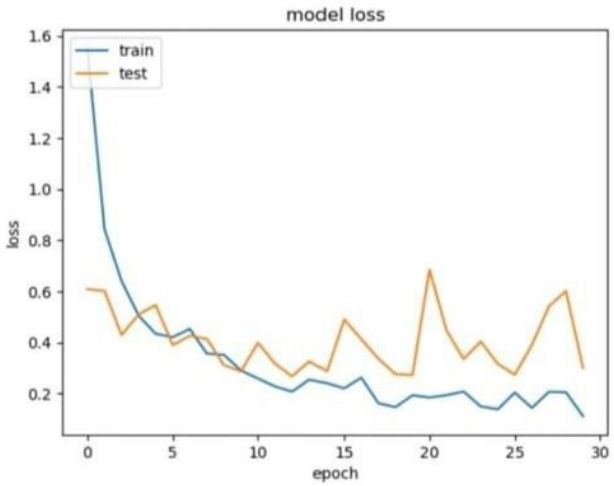

Fig. 13. The above curve shows variation of model loss with incrementing epoch

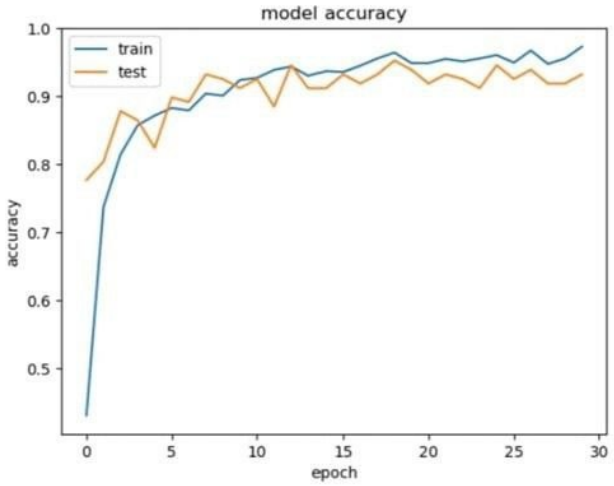

Fig. 14. The above curve shows variation of model accuracy with incrementing epoch

VII. Conclusion & Future Works

The problem with most existing data on diseases and treatments is that it's not very accurate. While medicine has advanced significantly over the past few decades, there's still a lot of room for improvement. The good news is that we now have access to more and better information than ever before. The bad news is that much of this information isn't easy to access or interpret. In order to make good use of it, we need to be able to analyze it in a systematic way. In collaboration with doctors, researchers, and data analysts we want develop a fully featured dynamic application and it makes it easier than ever before for users to find out what treatment might work best for their particular condition. Hiring a doctor for virtual consultation is a good idea because the doctor may be able to help you with your health problem. The doctor can give you advice about your health condition and can also recommend other people who would be able to help you. Skin illnesses can significantly reduce a person's quality of life. They can result in physical discomfort, mental misery, and social isolation. They can also be financially burdensome, since many skin illnesses require costly treatment. Skin illnesses, in extreme circumstances, can be fatal. Because of its user-friendliness, it simplifies and simplifies daily life. The

skin illness app is an excellent resource for anyone suffering from a skin issue. It contains information on various skin illnesses, as well as treatment alternatives and advice on how to manage your condition. Analysing any form of skin problem does not necessitate costly physical consultation

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